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Electrochemical Performance of Lithium Iron Phosphate Doped with Tungsten HANU ARAVA, ANDREW TRENCHARD, GAN LIANG, HUI FANG, Sam Houston State University — Due to its high thermal stability, low cost and high theoretical charge capacity, LiFePO4 has emerged as one of the most promising cathode materials for large-scale lithium ion batteries. In this work, we systematically investigated the effect on structure and electrochemical properties brought by W doping on Fe site of LiFePO4. LiFe_{1-x}W_xPO4 (x= 0. 0.01, 0.02, 0.03) samples with and without carbon coating were prepared by using solid-state reaction. The phase and structure of as prepared powders were characterized by Xray diffraction. Cycling charge and discharge measurement at various C-rates and cyclic voltammetry were employed to reveal the electrochemical properties. Results showed that C coating dramatically improved the capacity at fast C-rate. 2 at.% W doping further enhances the capacity and retention of capacity.

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